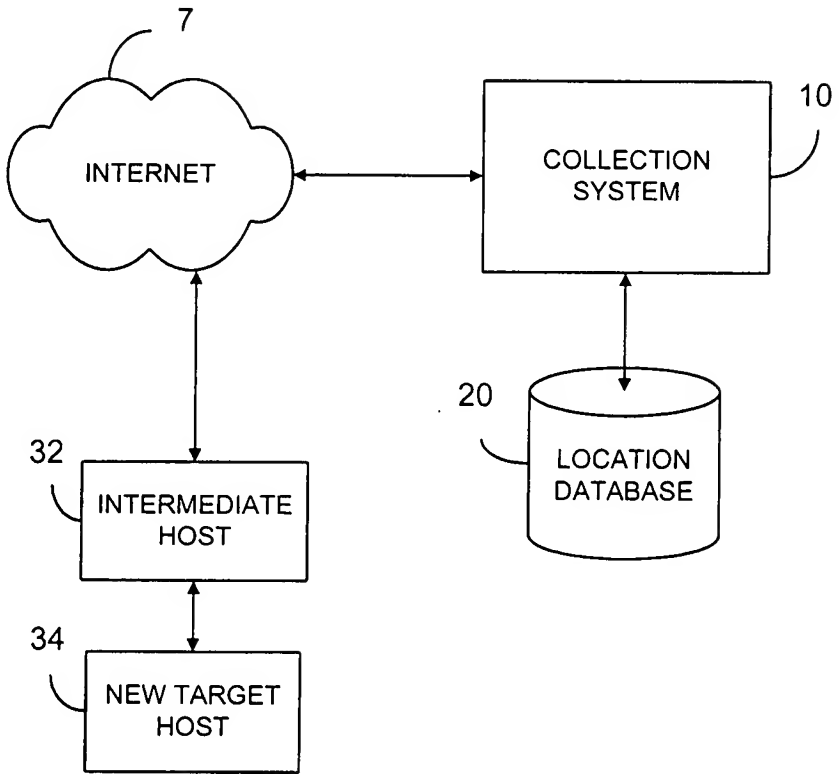
7
INTERNET
10
COLLECTION SYSTEM
20
LOCATION DATABASE
32
INTERMEDIATE HOST
34
NEW TARGET HOST

FIGURE 1

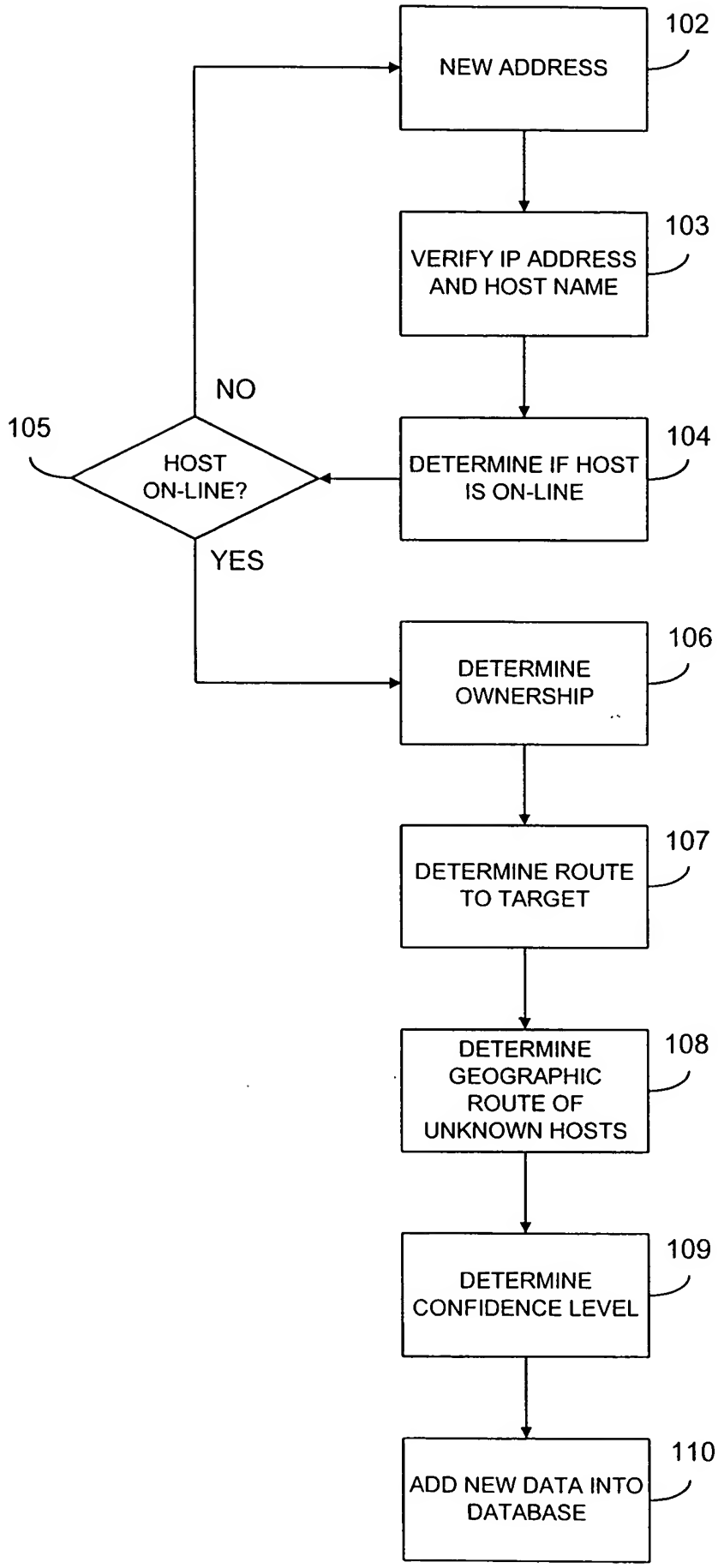
100
NEW ADDRESS
102
VERIFY IP ADDRESS AND HOST NAME
103
DETERMINE IF HOST IS ON-LINE
104
HOST ON-LINE?
105
NO
YES
DETERMINE OWNERSHIP
106
DETERMINE ROUTE TO TARGET
107
DETERMINE GEOGRAPHIC ROUTE OF UNKNOWN HOSTS
108
DETERMINE CONFIDENCE LEVEL
109
ADD NEW DATA INTO DATABASE
110

FIGURE 2

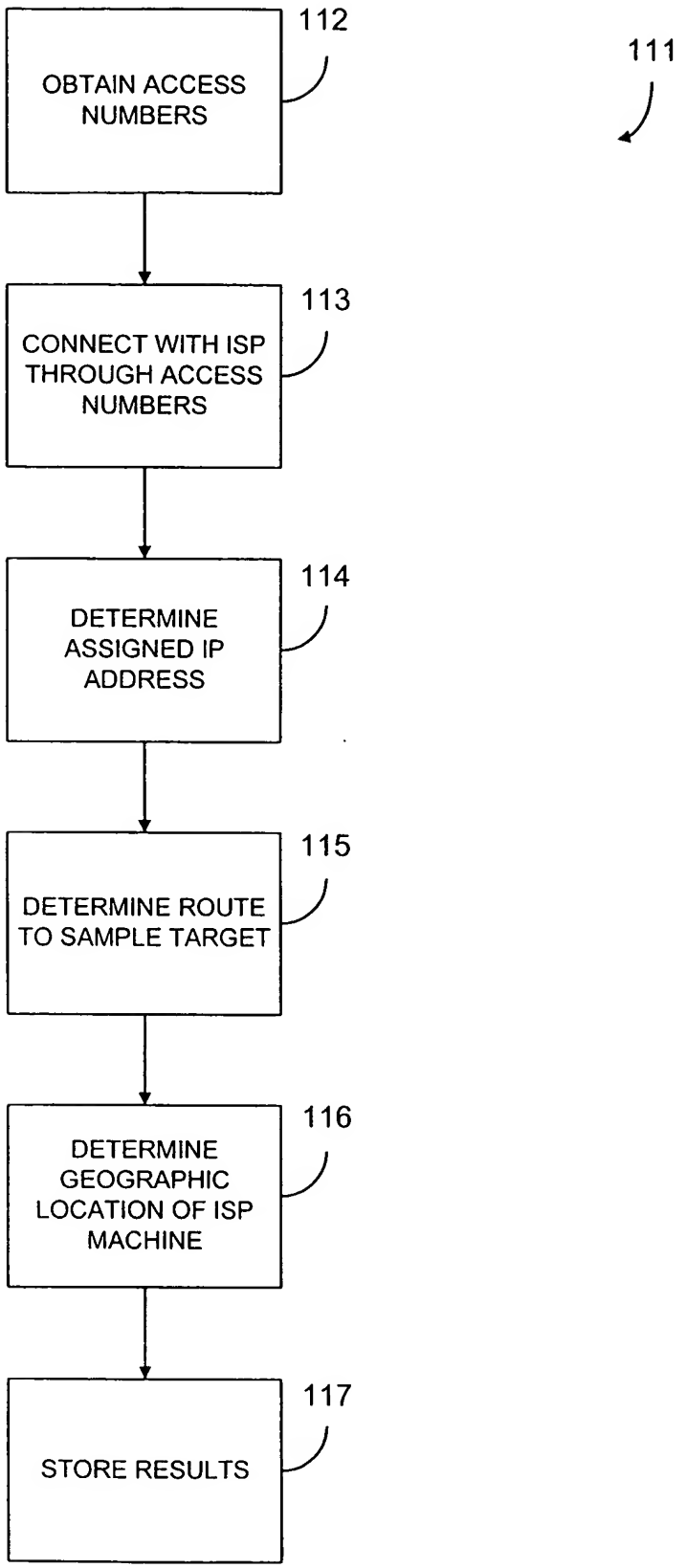
111
112
OBTAIN ACCESS NUMBERS
113
CONNECT WITH ISP THROUGH ACCESS NUMBERS
114
DETERMINE ASSIGNED IP ADDRESS
115
DETERMINE ROUTE TO SAMPLE TARGET
116
DETERMINE GEOGRAPHIC LOCATION OF ISP MACHINE
117
STORE RESULTS

FIGURE 3

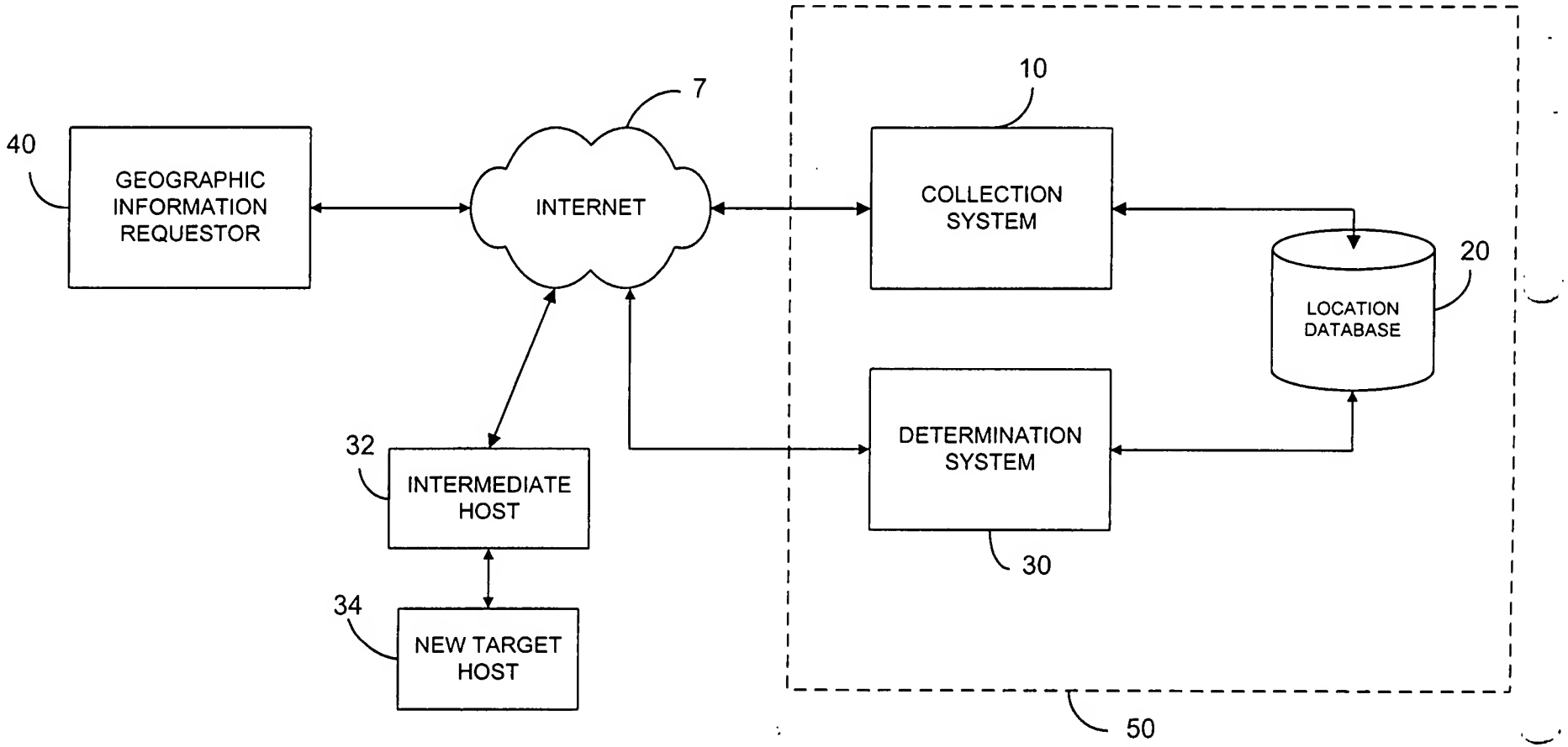
40
GEOGRAPHIC INFORMATION REQUESTOR
7
INTERNET
10
COLLECTION SYSTEM
20
LOCATION DATABASE
32
INTERMEDIATE HOST
34
NEW TARGET HOST
DETERMINATION SYSTEM
30
50

FIGURE 4

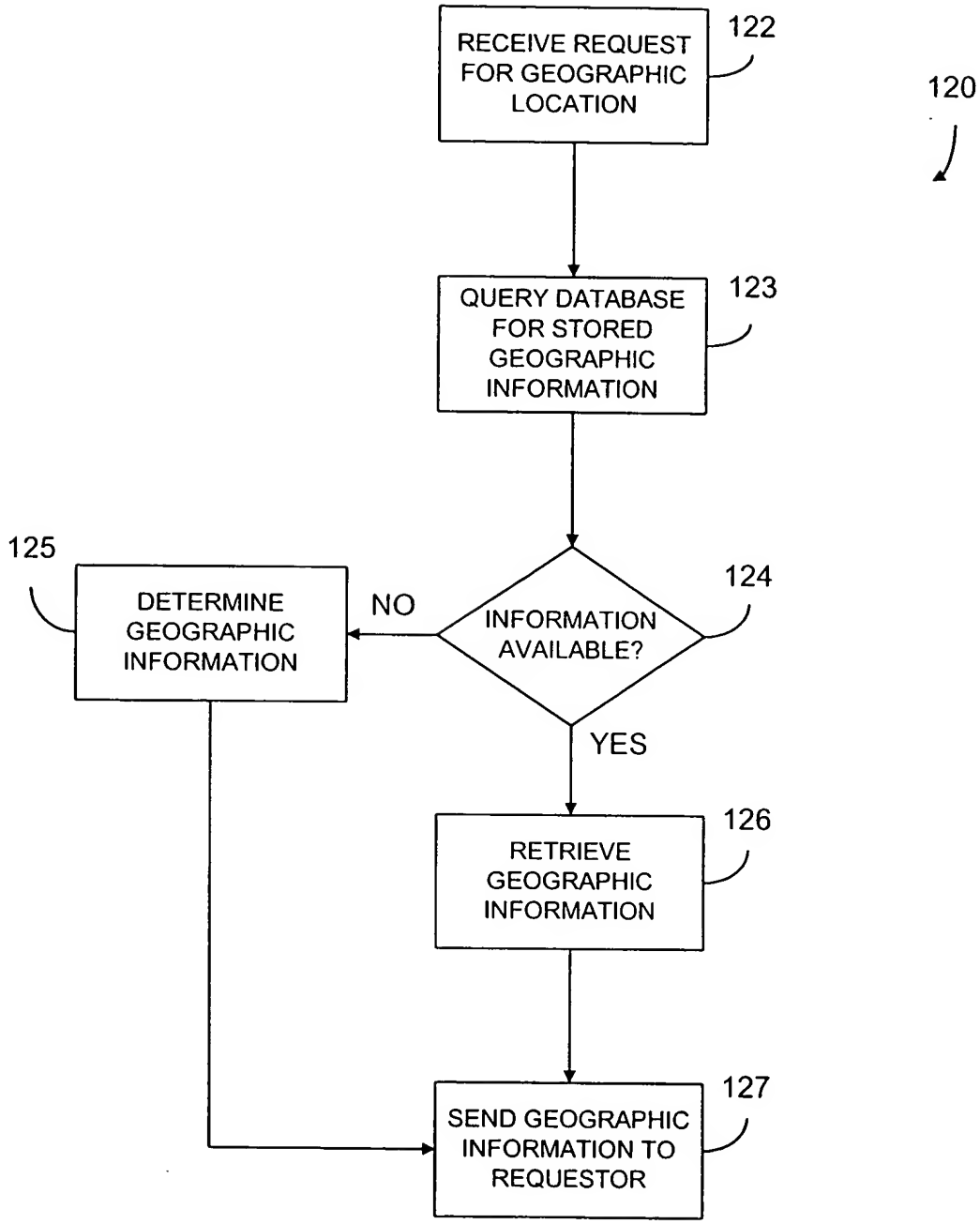
RECEIVE REQUEST FOR GEOGRAPHIC LOCATION
122
120
QUERY DATABASE FOR STORED GEOGRAPHIC INFORMATION
123
INFORMATION AVAILABLE?
124
NO
DETERMINE GEOGRAPHIC INFORMATION
125
YES
RETRIEVE GEOGRAPHIC INFORMATION
126
SEND GEOGRAPHIC INFORMATION TO REQUESTOR
127

FIGURE 5

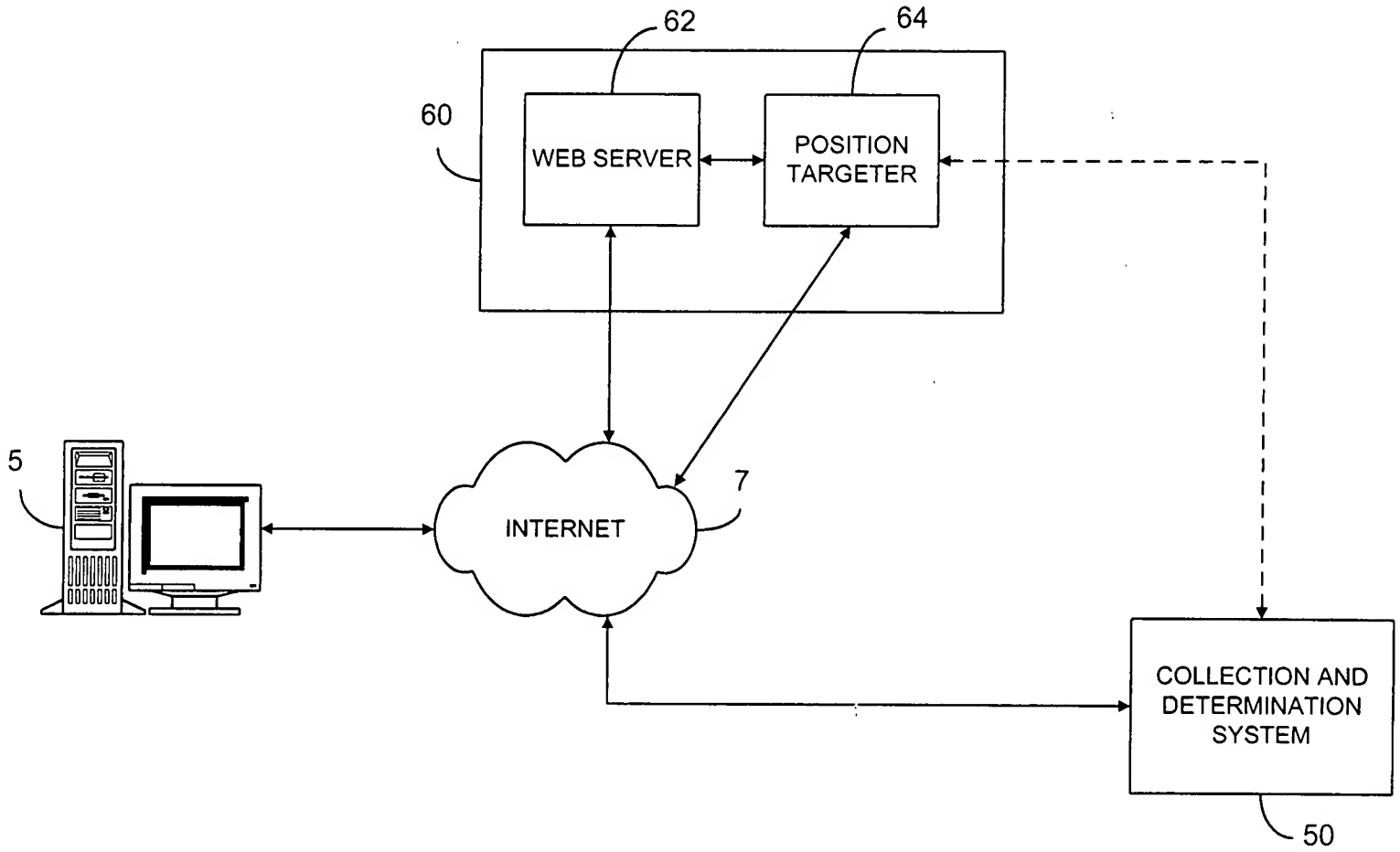
62
64
60
WEB SERVER
POSITION TARGETER
5
INTERNET
7
COLLECTION AND DETERMINATION SYSTEM
50

FIGURE 6

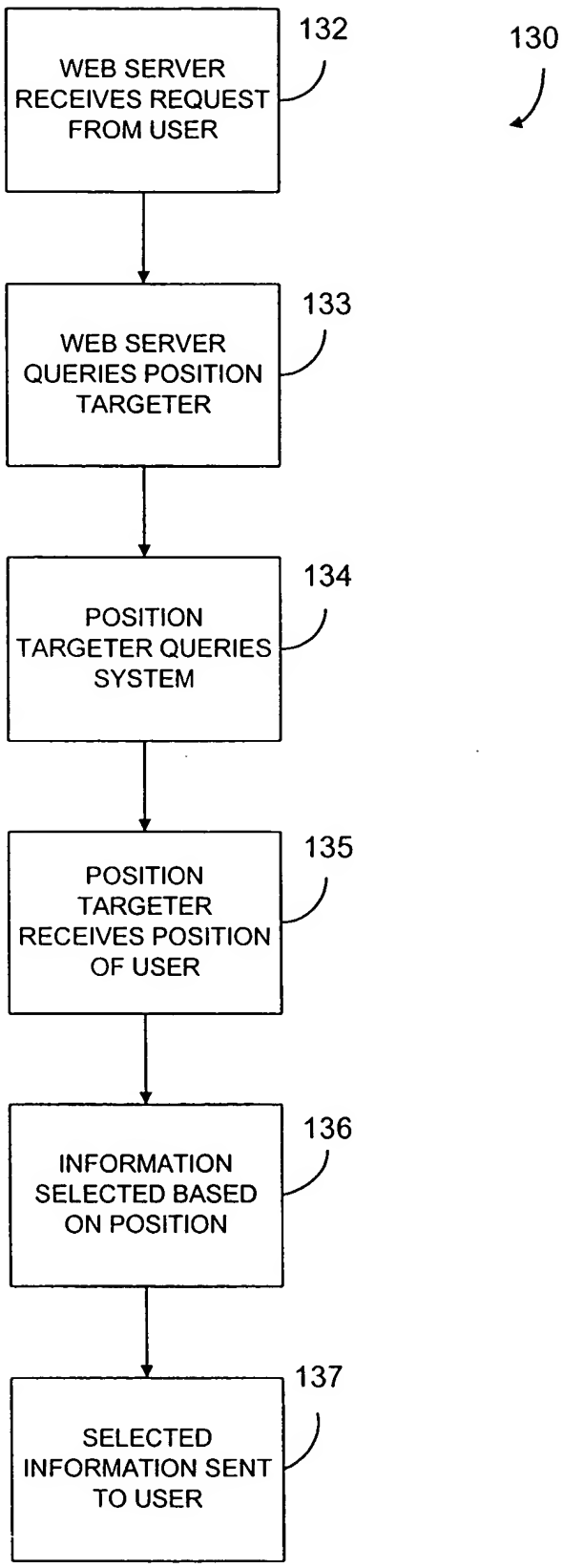
130
132
WEB SERVER RECEIVES REQUEST FROM USER
133
WEB SERVER QUERIES POSITION TARGETER
134
POSITION TARGETER QUERIES SYSTEM
135
POSITION TARGETER RECEIVES POSITION OF USER
136
INFORMATION SELECTED BASED ON POSITION
137
SELECTED INFORMATION SENT TO USER

FIGURE 7

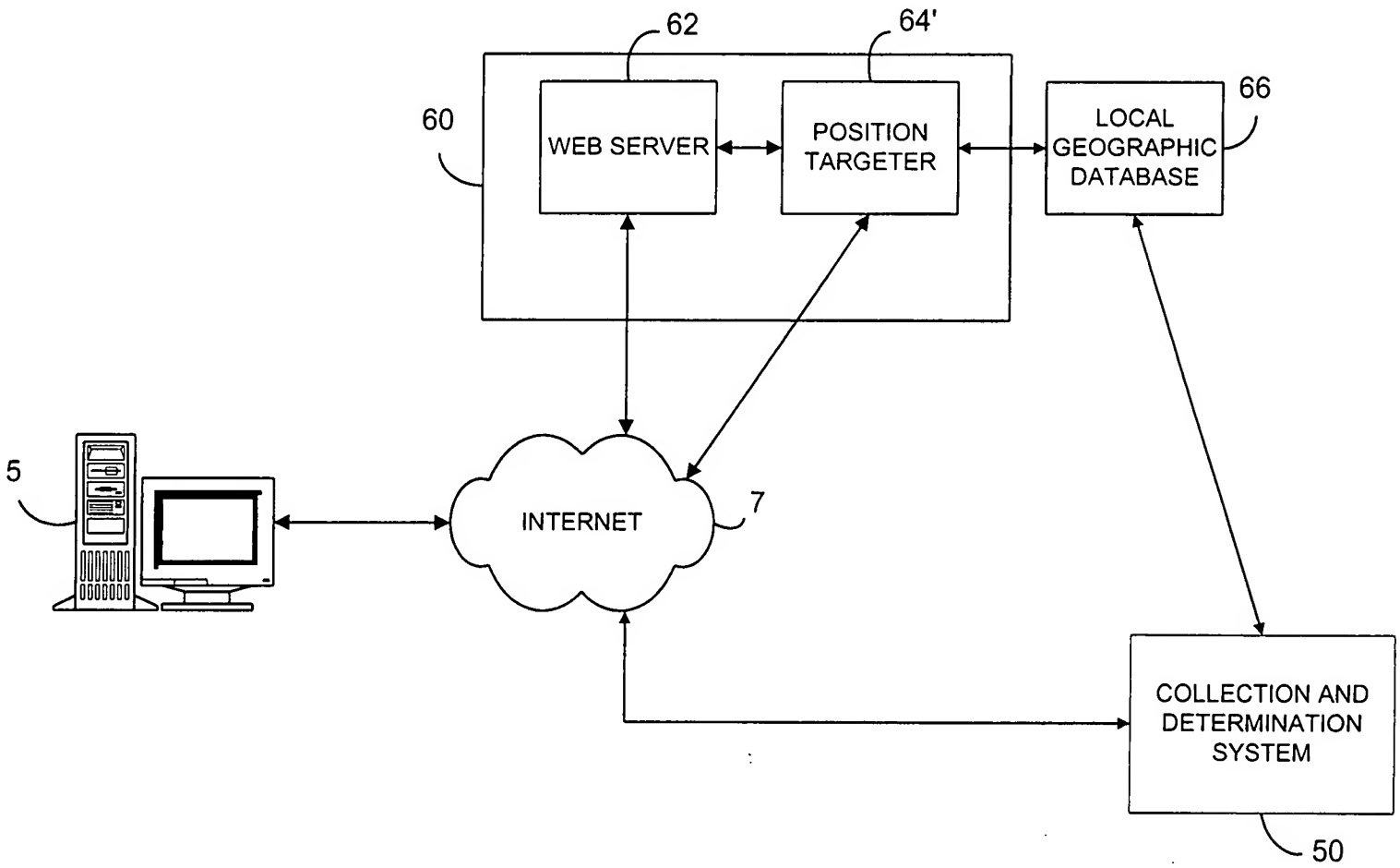
62
64'
60
WEB SERVER
POSITION TARGETER
LOCAL GEOGRAPHIC DATABASE
66
5
INTERNET
7
COLLECTION AND DETERMINATION SYSTEM
50

FIGURE 8

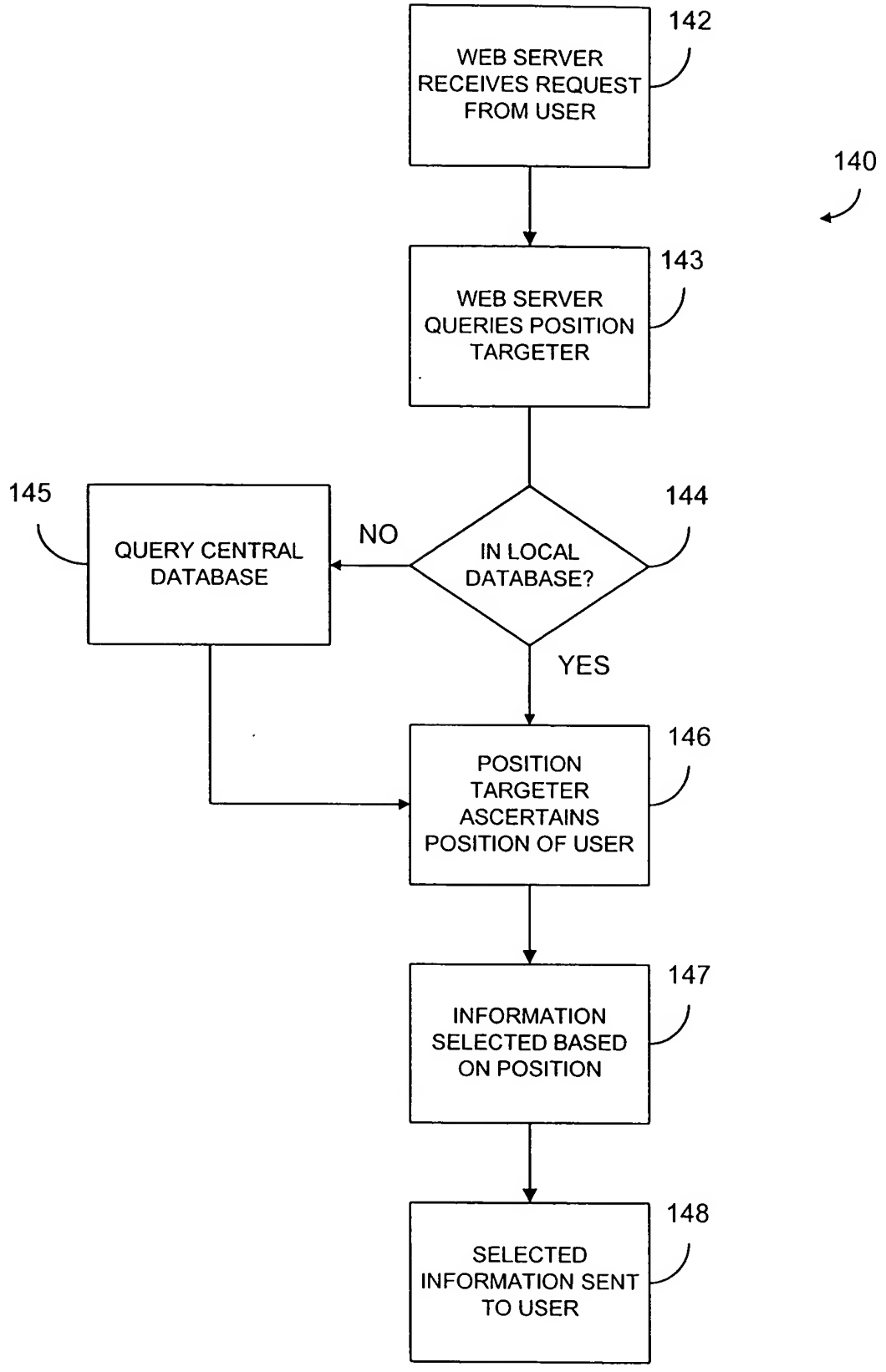
WEB SERVER RECEIVES REQUEST FROM USER
142
140
WEB SERVER QUERIES POSITION TARGETER
143
IN LOCAL DATABASE?
144
NO
QUERY CENTRAL DATABASE
145
YES
POSITION TARGETER ASCERTAINS POSITION OF USER
146
INFORMATION SELECTED BASED ON POSITION
147
SELECTED INFORMATION SENT TO USER
148

FIGURE 9

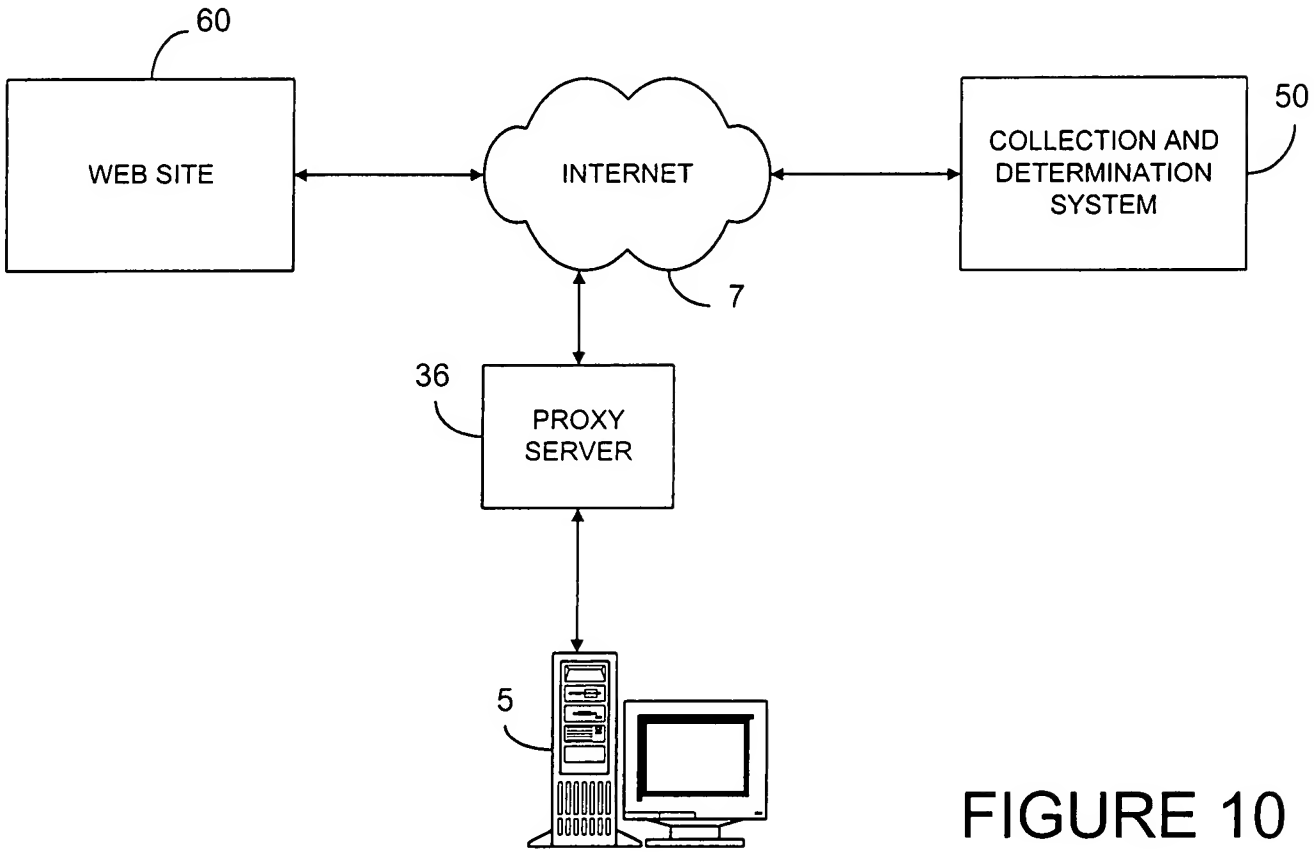
60
WEB SITE
INTERNET
7
COLLECTION AND DETERMINATION SYSTEM
50
36
PROXY SERVER
5

FIGURE 10

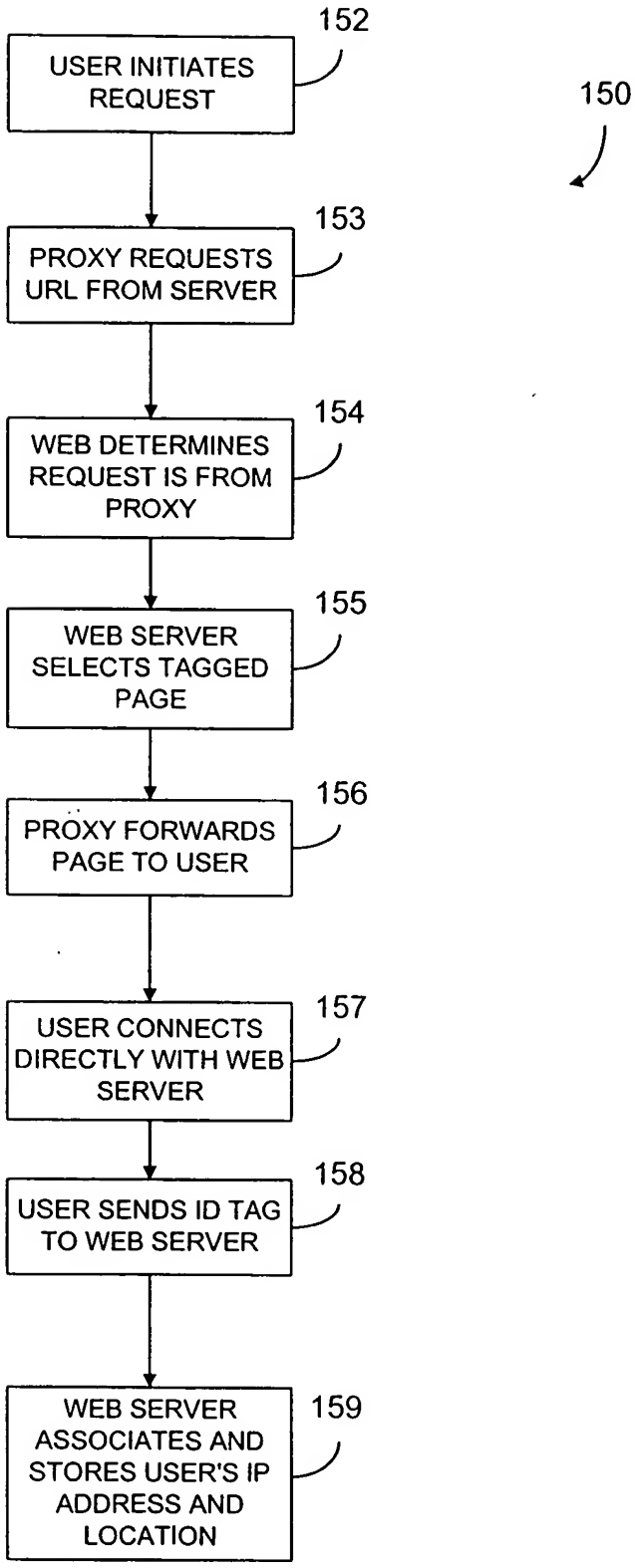
150
152
USER INITIATES REQUEST
153
PROXY REQUESTS URL FROM SERVER
154
WEB DETERMINES REQUEST IS FROM PROXY
155
WEB SERVER SELECTS TAGGED PAGE
156
PROXY FORWARDS PAGE TO USER
157
USER CONNECTS DIRECTLY WITH WEB SERVER
158
USER SENDS ID TAG TO WEB SERVER
159
WEB SERVER ASSOCIATES AND STORES USER'S IP ADDRESS AND LOCATION

FIGURE 11

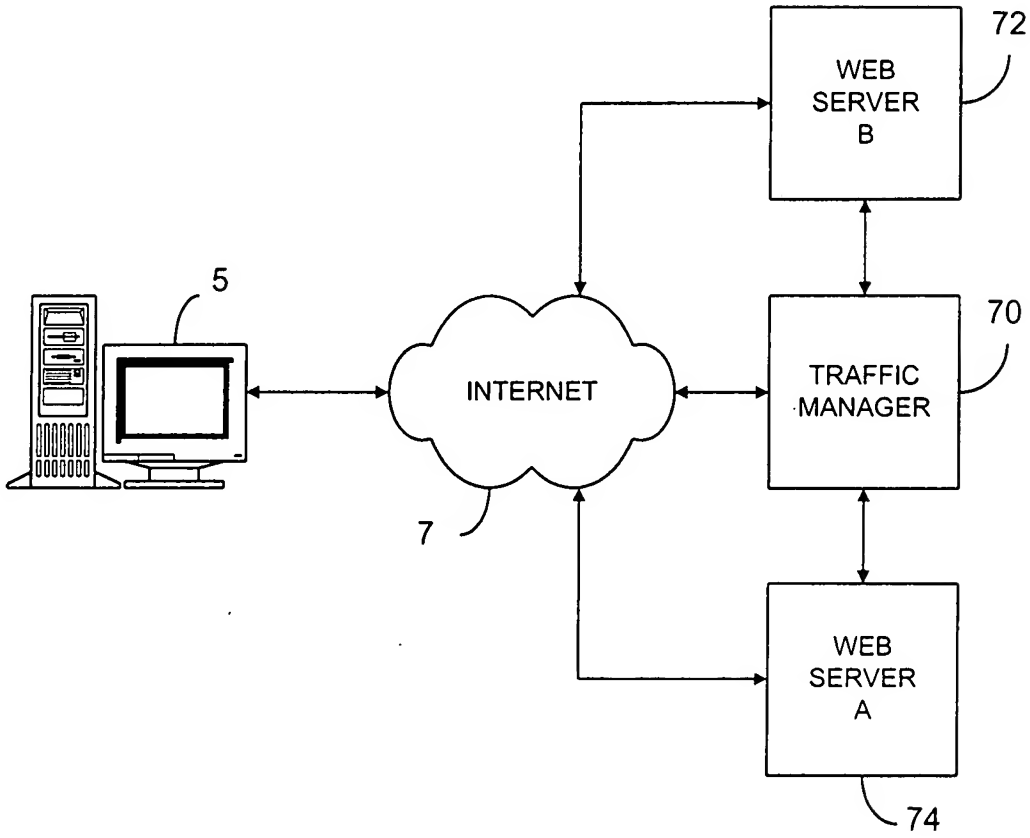
WEB
SERVER
B
72
5
INTERNET
TRAFFIC
MANAGER
70
7
WEB
SERVER
A
74

FIGURE 12

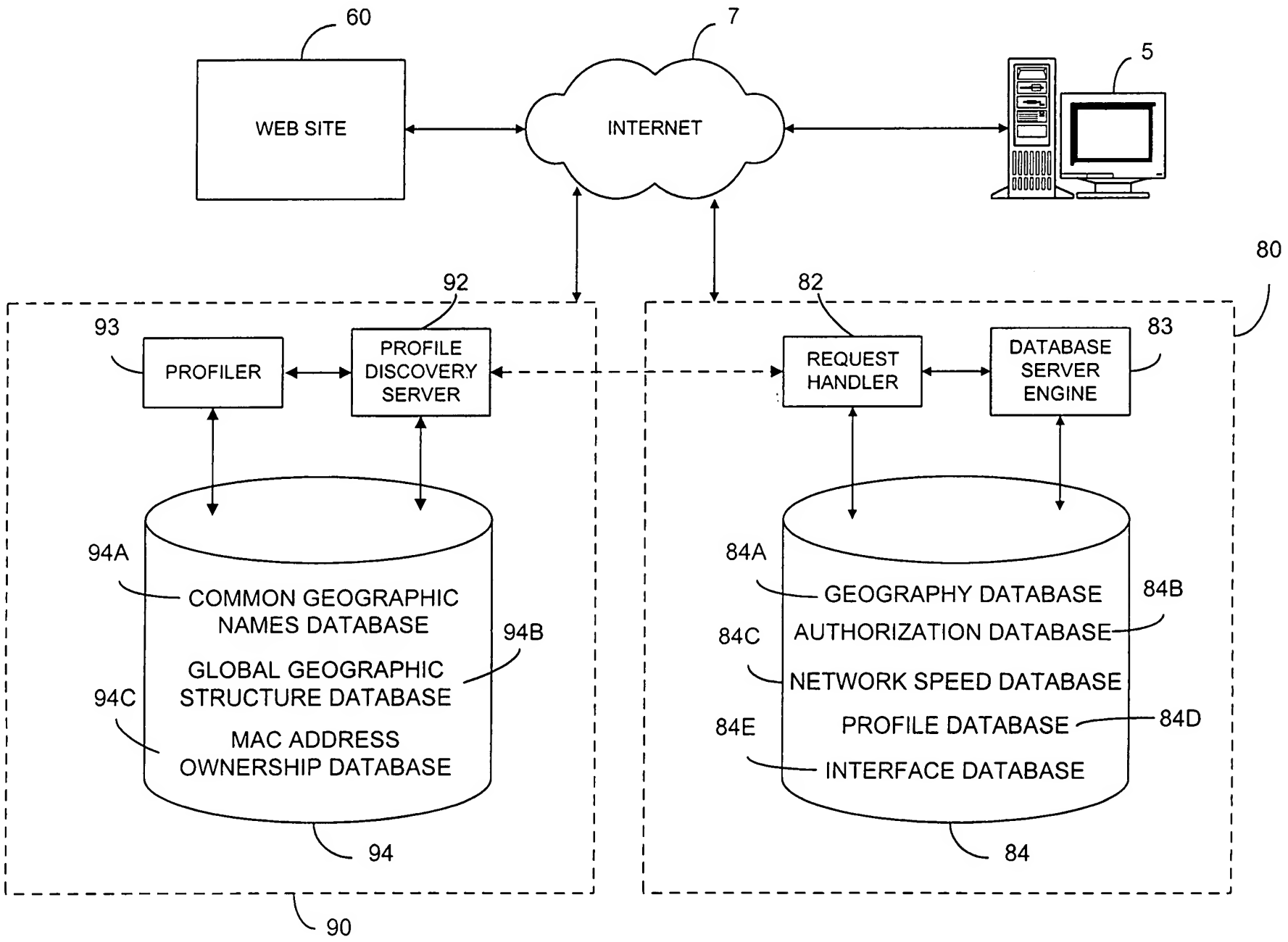
60
WEB SITE
7
INTERNET
5
80
92
82
93
PROFILER
PROFILE DISCOVERY SERVER
REQUEST HANDLER
DATABASE SERVER ENGINE
83
94A
COMMON GEOGRAPHIC NAMES DATABASE
94B
GLOBAL GEOGRAPHIC STRUCTURE DATABASE
94C
MAC ADDRESS OWNERSHIP DATABASE
94
84A
GEOGRAPHY DATABASE
84B
84C
AUTHORIZATION DATABASE
NETWORK SPEED DATABASE
84E
PROFILE DATABASE
84D
INTERFACE DATABASE
84
90

FIGURE 13

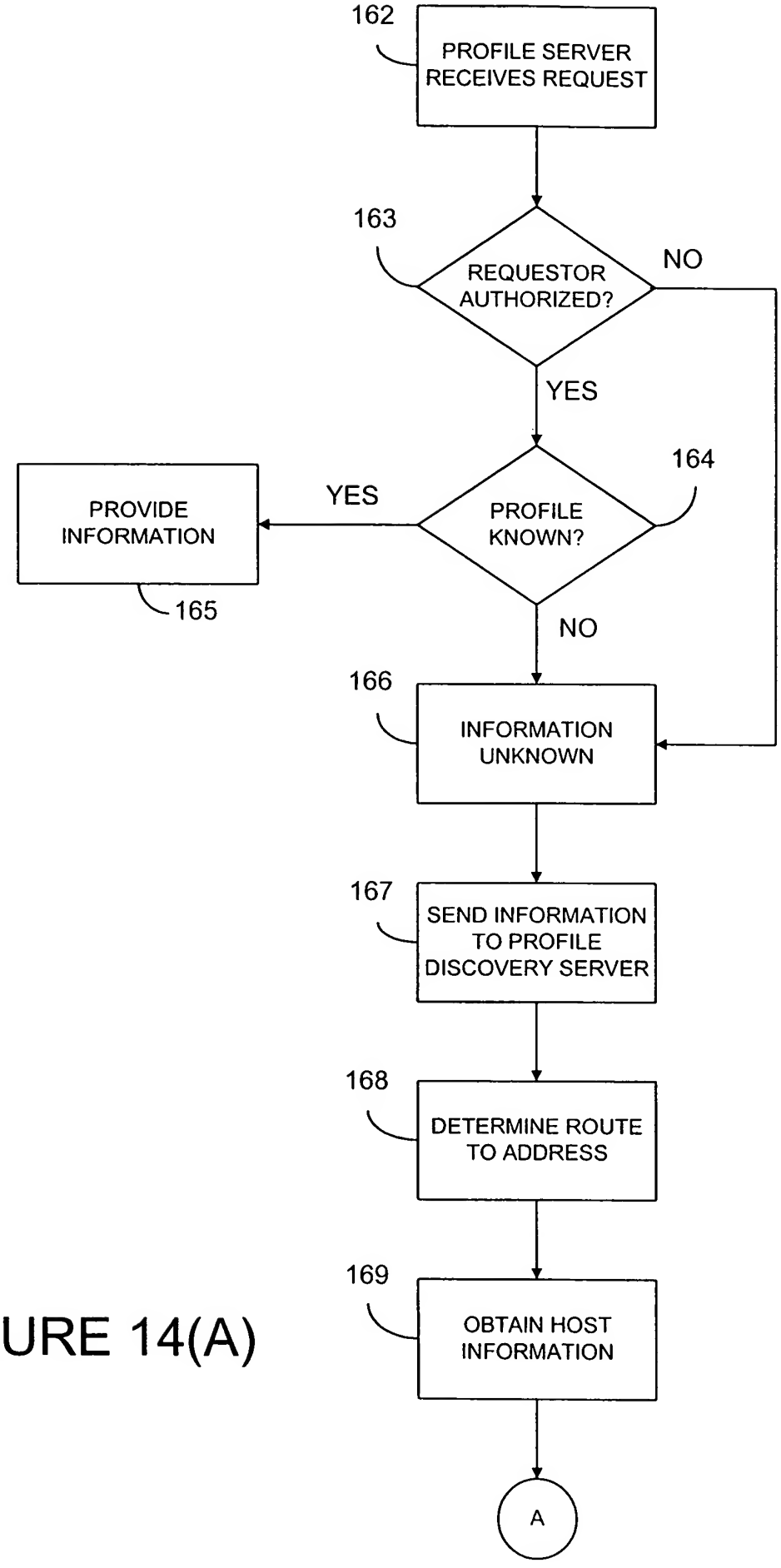
162
PROFILE SERVER RECEIVES REQUEST
163
REQUESTOR AUTHORIZED?
NO
YES
164
PROFILE KNOWN?
YES
PROVIDE INFORMATION
165
NO
166
INFORMATION UNKNOWN
167
SEND INFORMATION TO PROFILE DISCOVERY SERVER
168
DETERMINE ROUTE TO ADDRESS
169
OBTAIN HOST INFORMATION
A

FIGURE 14(A)

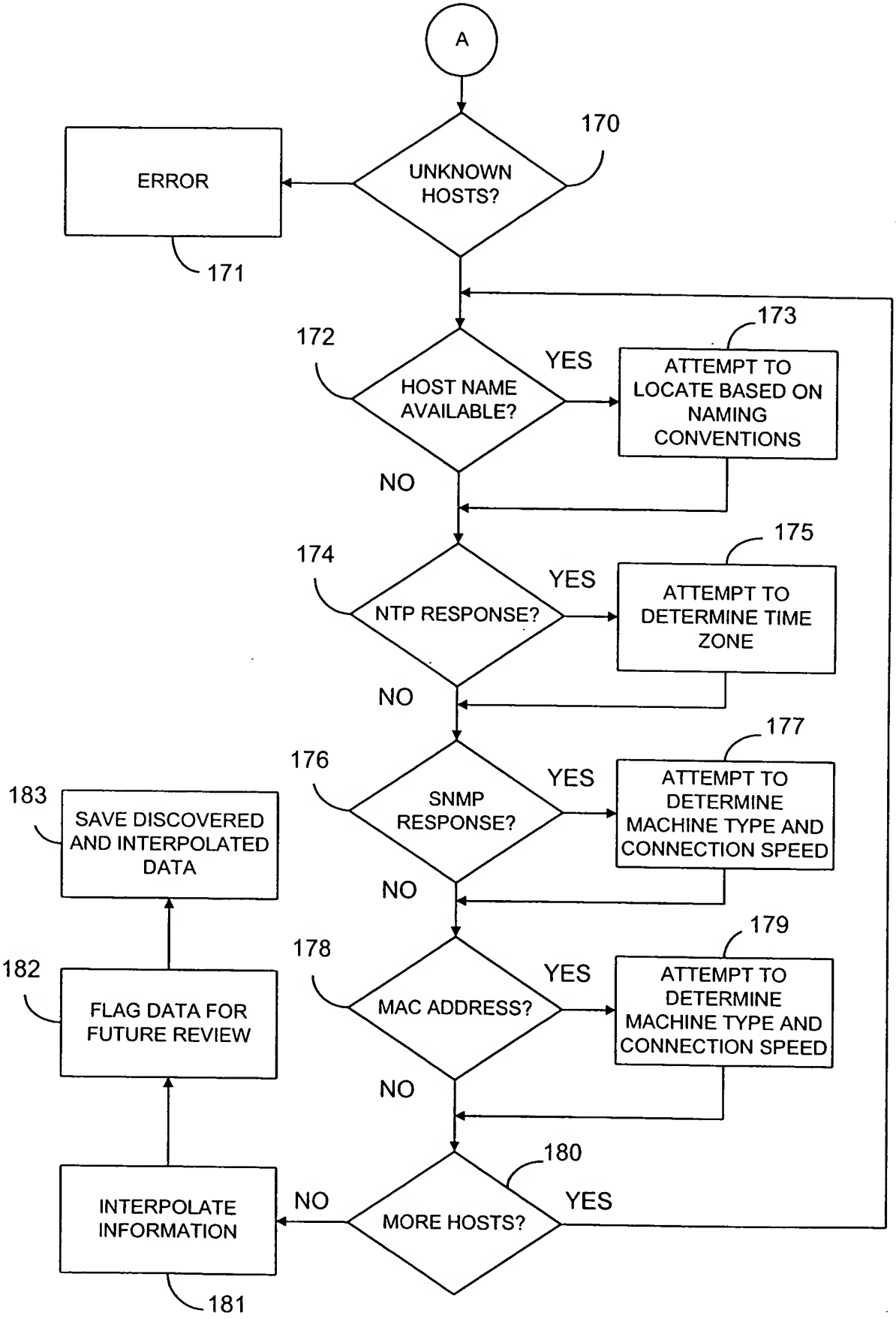
A
UNKNOWN HOSTS?
170
ERROR
171
HOST NAME AVAILABLE?
172
YES
ATTEMPT TO LOCATE BASED ON NAMING CONVENTIONS
173
NO
NTP RESPONSE?
174
YES
ATTEMPT TO DETERMINE TIME ZONE
175
NO
SNMP RESPONSE?
176
YES
ATTEMPT TO DETERMINE MACHINE TYPE AND CONNECTION SPEED
177
NO
MAC ADDRESS?
178
YES
ATTEMPT TO DETERMINE MACHINE TYPE AND CONNECTION SPEED
179
NO
MORE HOSTS?
180
NO
YES
INTERPOLATE INFORMATION
181
FLAG DATA FOR FUTURE REVIEW
182
SAVE DISCOVERED AND INTERPOLATED DATA
183

FIGURE 14(B)